BEST AVAILABLE COPY

Amendments to the Claims:

1. (Withdrawn) An antimicrobial and chemical deactivating composition for use in a liquid medium or for incorporation into a coating, structural plastic material, thin microporous membrane, textile, or sponge, said composition comprising nanosize or submicron particles of silver, silver-copper alloy, chemical compounds of copper, iron, molybdenum and zinc Pyrithione.

2. (Withdrawn) An antimicrobial composition comprising nanosize or submicron size silver, silver-copper alloy, copper, iron, molybdenum and zinc Pyrithione as a powder, dispersion or an encapsulated composition with a suitable polymeric hydrogel selected from a group of acrylates, hydrophilic polyurethanes, polyvinyl alcohol, natural biopolymers, polyacetic acid, and acrylamides.

3. (Canceled)

4. (Withdrawn) A method for reducing the exposure to, or for deactivating chemical and biological warfare agents, and other toxic organic vapors at the surfaces of materials, comprising incorporating an antimicrobial and a chemical deactivating agent in porous fluropolymers with a sandwich layer or crosslinked polyvinyl alcohol or vinylalcohol copolymers with plasticizers and additives with the cross linking agents glyoxal, formaldehyde, and titanium triamino isopropoxide.

5. (Currently Amended) An antimicrobial, chemical protective and chemical agent deactivating material comprising:

a laminating layer for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

a chemical deactivating composition deposited on said laminating layer, said chemical deactivating composition comprising 5 to 25 percent by weight of a chemical deactivating formulation and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material comprising 75 to

PAGE 4/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

95 percent by weight of the chemical deactivating composition, said chemical deactivating formulation comprising:

5 to 25 percent by weight of nanosize metallic particles selected from the group consisting of silver and silver-copper alloys;

15 to 60 percent by weight of metal compounds selected from the group of titanium, copper, Molybdenum, silver, copper vanadium, manganese and iron;

0 to 3 percent by weight of organic tertiary amine bearing compounds;

0 to 1 percent by weight of inert materials selected from the group of montmorrillonite and talc; and

0 to 3 percent by weight of citric acid;

an antimicrobial composition deposited on said ~~catalytic materials~~ chemical deactivating composition, said antimicrobial composition comprising 5 to 25 percent by weight of an antimicrobial formulation, 3 to 6.6 percent by weight of zinc pyrithione and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material making up 15 to 95 percent by weight of the antimicrobial composition, said antimicrobial formulation comprising:

5 to 27.5 percent by weight of nanosize metallic particles selected from the group of silver and silver/copper alloys;

15 to 46 percent by weight of one or more metal compounds selected from the group of oxides, phosphates, citrates, pyrithione and salicylates of silver, copper, zinc and bismuth;

0 to 10 percent by weight of sodium compounds selected from the group of salicylate and triphosphate; and

0 to 80 percent by weight of parabenzoic acid esters.

6. (Currently Amended) The antimicrobial, chemical protective and chemical agent deactivating material of claim 5 wherein said laminating layer, said ~~catalytic material~~ chemical deactivating composition and said antimicrobial are free from activated carbon.

PAGE 5/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

7. (Withdrawn) The antimicrobial and chemical deactivating material of claim 5 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier.

8. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 5 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Poly tetrafluoro Ethylene film wherein the polyvinyl alcohol is cross linked.

9. (Previously Amended) A chemical protective and chemical agent deactivating material comprising:

a laminating layer for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

a chemical deactivating composition deposited on said laminating layer, said chemical deactivating composition comprising 5 to 25 percent by weight of a chemical deactivating formulation and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material comprising 75 to 95 percent by weight of the chemical deactivating composition, said chemical deactivating formulation comprising:

5 to 25 percent by weight of nanosize metallic particles selected from the group consisting of silver and silver-copper alloys;

15 to 60 percent by weight of metal compounds selected from the group of titanium, copper, Molybdenum, silver, copper vanadium, manganese and iron;

0 to 3 percent by weight of organic tertiary amine bearing compounds;

0 to 1 percent by weight of inert materials selected from the group of montmorrillonite and talc; and

0 to 3 percent by weight of citric acid.

PAGE 6/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

10. (Currently Amended) The chemical protective and chemical agent deactivating material of claim 9 wherein said laminating layer, said chemical deactivating composition ~~catalytic material~~ and said antimicrobial are free of activated carbon.

11. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 9 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier.

12. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 9 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Poly tetrafluoro Ethylene E film wherein the plasticized polyvinylalcohol layer is cross-linked.

13. (Currently Amended) An antimicrobial and chemical protective material comprising:

a laminating layer for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

an antimicrobial composition deposited on said ~~catalytic materials~~ laminating layer, said antimicrobial composition comprising 5 to 25 percent by weight of an antimicrobial formulation, 3 to 6.6 percent by weight of zinc pyrithione and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material making up 15 to 95 percent by weight of the antimicrobial composition, said antimicrobial formulation comprising:

5 to 27.5 percent by weight of nanosize metallic particles selected from the group of silver and silver/copper alloys;

15 to 46 percent by weight of one or more metal compounds selected from the group of oxides, phosphates, citrates, pyrithione and salicylates of silver, copper, zinc and bismuth;

0 to 10 percent by weight of sodium compounds selected from the group of salicylate and triphosphate; and

0 to 80 percent by weight of parabenzoic acid esters.

US1DOCS 5035788v1
PAGE 7/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

14. (Previously Amended) The antimicrobial and chemical protective material of claim 13 wherein said laminating layer, said ~~catalytic material~~ chemical deactivating composition and said antimicrobial are free of activated carbon.

15. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 13 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier

16. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 13 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Polytetra fluoro ethylene film wherein the polyvinylalcohol layer is cross-linked.

17. (Withdrawn) An antimicrobial and chemical deactivating mixture comprising:

catalytic material for providing chemical deactivation;

an antimicrobial;

polyvinyl alcohol;

wherein said catalytic material, antimicrobial and polyvinyl alcohol are blended to form said mixture.

18. (Withdrawn) An antimicrobial and chemical deactivating material comprising:

a laminating layer of plasma treated polyvinyl alcohol for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

catalytic material deposited on said laminating layer to provide chemical deactivation;

an antimicrobial deposited on said catalytic materials.

19. (Withdrawn) The antimicrobial and chemical deactivating material of claim 18 wherein said laminating layer, said catalytic material and said antimicrobial are carbon free.

US1DOCS 5035788v1
PAGE 8/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

20. (Withdrawn) An antimicrobial and chemical deactivating textile finish coating comprising:

polyurethane;

an antimicrobial blended with said polyurethane.

PAGE 9/11 * RCVD AT 4/1/2005 12:17:33 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/26 * DNIS:2738300 * CSID:617 526 5000 * DURATION (mm-ss):03-28

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☑ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☑ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.